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Applicant(s):

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Title:

CDMA to Packet Switching Interface For Code Division Switching In A Terrestrial

Wireless System

ASSISTANT COMMISSIONER FOR PATENTS WASHINGTON, D.C. 20231

SIR:

ATTENTION: Official Draftsperson

Attached in response to the Notice to File Corrected Application Papers, dated March 7, 2001, are fifteen pages of formal drawings, Figures 1 through 8c. Please substitute these drawings in place of the informal drawings you received with the original application filed on January 26, 2001, 2001. A copy of the Notice to File Corrected Application Papers is also enclosed.

Date:

July 30,2001

By:

Alfred G^USteinmetz

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Reg. No.: 22971

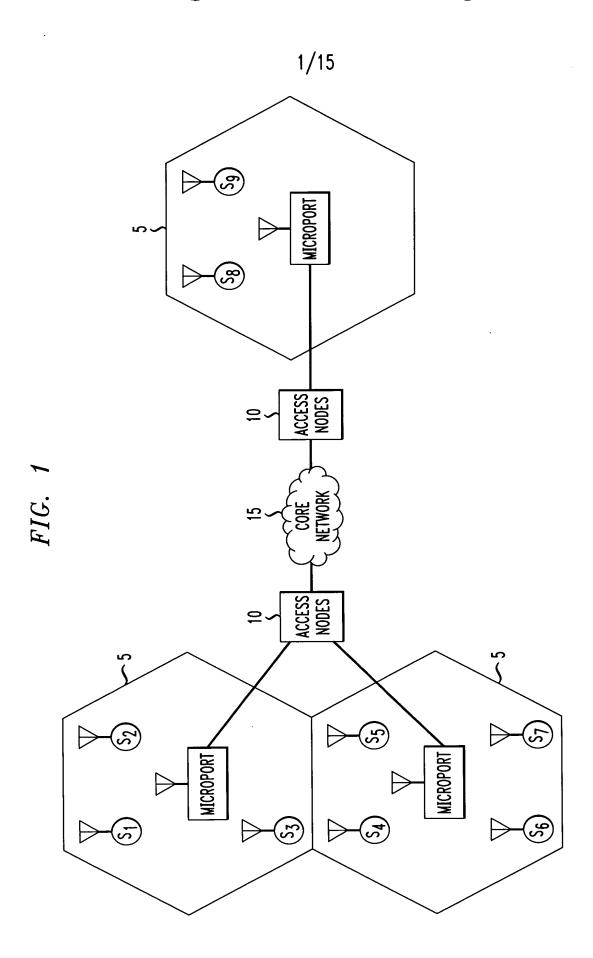
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FIG. 2

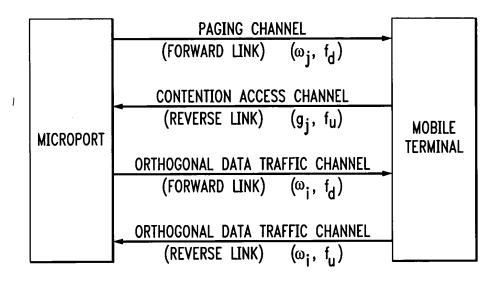
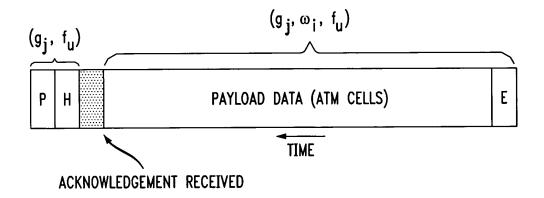


FIG. 3α



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FIG. 3b

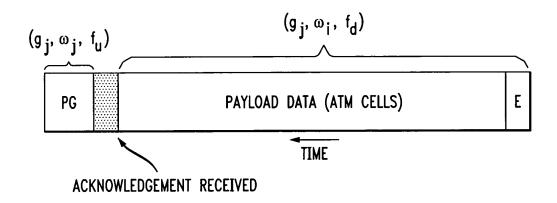


FIG. 4α

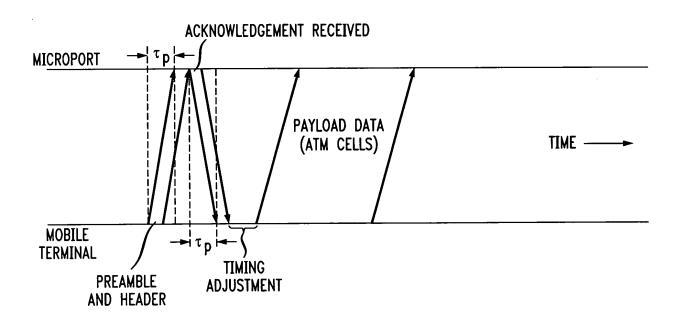


FIG. 4b

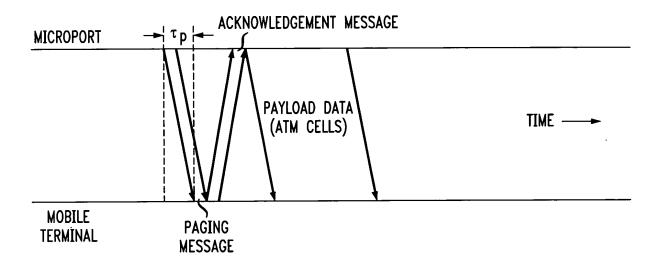


FIG. 5α



THE MOBILE SUBSCRIBER TERMINAL TRANSMITS A PREAMBLE SIGNAL SPREAD BY A PN-CODE $\mathbf{g_j}$ (IDENTIFYING THE MICROPORT AND "MARKS" THE POINT OF THE TIME ORIGIN. FOLLOWING THE PREAMBLE, A FEW BITS OF DATA ARE TRANSMITTED THAT IDENTIFY THE TRANSMITTING MOBILE USER. THIS CONSTITUTES THE PACKET HEADER AND IS ALSO SPREAD BY THE PN-CODE $\mathbf{g_i}$.

AFTER AN ACKNOWLEDGEMENT IS RECEIVED WITHIN TIME OUT PERIOD, THE MOBILE SUBSCRIBER TERMINAL SPREADS THE INFORMATION AND DATA (i.e., ATM CELL) BY BOTH THE ASSIGNED ORTHOGONAL CODE (CONTAINED IN THE ACKNOWLEDGEMENT.) AND THE PN-CODE. THE MOBILE SUBSCRIBER TERMINAL ALSO ADJUSTS ITS TRANSMISSION TIME (WITH RESPECT TO THE MARKED POINT MAINTAINED BY THE MICROPORT) BY THE AMOUNT INDICATED IN THE ACKNOWLEDGEMENT SO THAT ALL TRANSMISSIONS ARE SYNCHRONIZED. IF NO ACKNOWLEDGEMENT IS RECEIVED WITHIN TIME OUT THE MOBILE RETRANSMITS THE PREAMBLE AND HEADER.

AFTER THE END OF THE INFORMATION AND DATA, THE MOBILE SUBSCRIBER TERMINAL SENDS AN END OF PACKET FLAG, WHICH IS ALSO SPREAD BY THE ORTHOGONAL AND PN CODES. THE ASSIGNED ORTHOGONAL CODE IS RELEASED, MAKING THAT UNIQUE CODE AVAILABLE FOR REUSE.



FIG. 5b



THE MICROPORT RECEIVER ACQUIRES (SYNCHRONIZES TO) THE PN-CODE g DURING THE TRANSMISSION OF THE PREAMBLE. THE HEADER IS RECEIVED AND ALSO DESPREAD BY THE PN-CODE.

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IF THE HEADER DATA IS SUCCESSFULLY RECEIVED, THE RECEIVING MICROPORT SEND AN ACKNOWLEDGMENT CONTAINING AN UNIQUELY ASSIGNED ORTHOGONAL CODE FOR THE ORIGINATING MOBILE USER AND THE REQUIRED TIMING ADJUSTMENTS FOR THE MOBILE USER.

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THE RECEIVING MICROPORT RECEIVES THE INFORMATION AND DATA (PAYLOAD DATA) AND PROCESSES THE DATA BY DESPREADING THE INFORMATION AND DATA WITH BOTH THE ASSIGNED ORTHOGONAL CODE AND THE PN-CODE.

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IF THE INFORMATION AND DATA ARE SUCCESSFULLY RECEIVED, THEN AN ATM PACKET (CELL) IS CREATED AND ROUTED THROUGH THE CORE NETWORK. AFTER THE END OF THE PACKET FLAG IS RECEIVED THEN THE ASSIGNED ORTHOGONAL CODE IS RELEASED.

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END

FIG. 5c



UPON THE ARRIVAL OF ONE OR MORE ATM CELLS AT THE TRANSMITTING MICROPORT, DESTINED FOR A MOBILE USER TERMINAL, A PAGING MESSAGE IS SENT TO THE MOBILE USER TERMINAL VIA THE PAGING CHANNEL

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AFTER AN ACKNOWLEDGMENT IS RECEIVED FROM THE
DESTINATION MOBILE USER TERMINAL, THE TRANSMITTING MICROPORT
SPREADS THE PAYLOAD DATA (EXTRACTED FROM THE ATM CELLS)
WITH THE UNIQUELY ASSIGNED ORTHOGONAL CODE ω_i AND TRANSMIT
THE SPREAD DATA TO THE DESTINATION MOBILE USER TERMINAL

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IF, AFTER A TIME OUT PERIOD, NO NEGATIVE ACKNOWLEDGMENT IS RECEIVED, THE TRANSMITTING MICROPORT ASSUMES CORRECT RECEPTION OF THE DATA AND RELEASES THE ASSIGNED (FORWARD LINK) ORTHOGONAL CODE AVAILABLE FOR OTHER TRANSMISSIONS.

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<u>↓</u> END

FIG. 5d



WHILE IDLE, THE MOBILE USER TERMINAL MONITORS THE PAGING CHANNEL FOR TRANSMISSIONS (PAGING MESSAGES).

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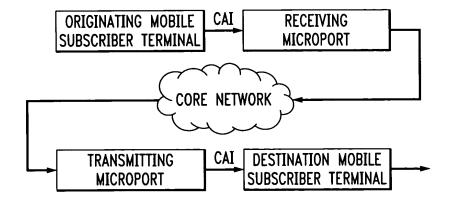
IF A PAGING MESSAGE IS RECEIVED INDICATING THE ASSIGNMENT OF A PARTICULAR ORTHOGONAL CODE, THE MOBILE SUBSCRIBER TERMINAL SWITCHES TO THE ORTHOGONAL CODE ASSIGNED BY THE TRANSMITTING MICROPORT IN ORDER TO RECEIVE THE SPREAD DATA. 560 THE DESTINATION MOBILE USER TERMINAL RESPONDS TO THE TRANSMITTING MICROPORT BY SENDING AN ACKNOWLEDGMENT VIA THE CONTENTION ACCESS CHANNEL.

AFTER THE "END OF PACKET" FLAG IS RECEIVED, THE MOBILE USER TERMINAL REVERTS TO MONITORING THE PAGING CHANNEL FOR OTHER PAGING MESSAGES (TRANSMISSIONS).

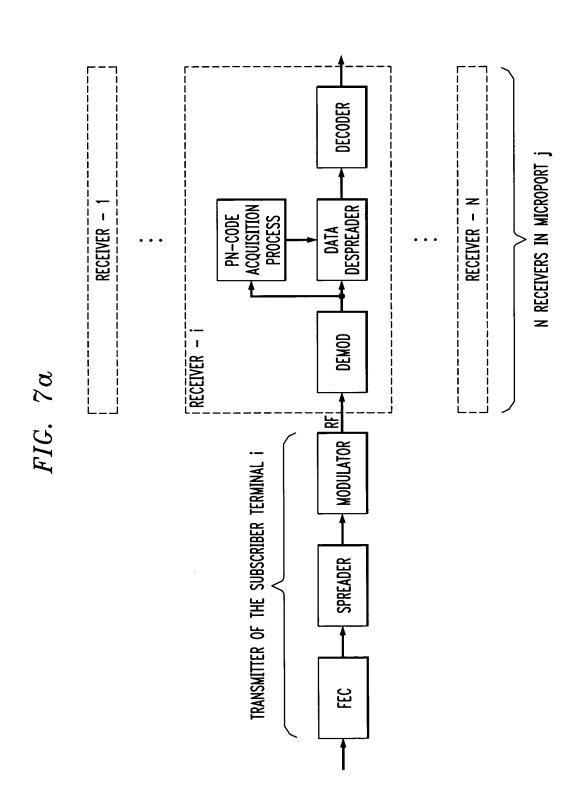
^ 565

END

FIG. 6



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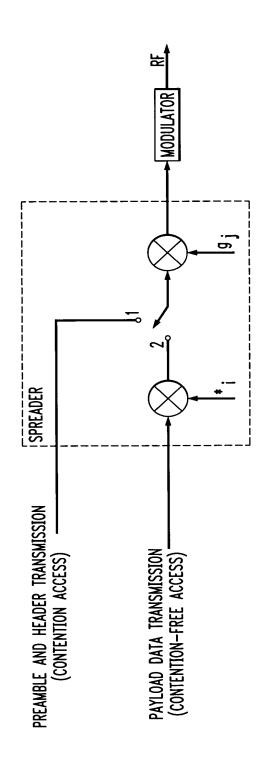


FIG. 7b

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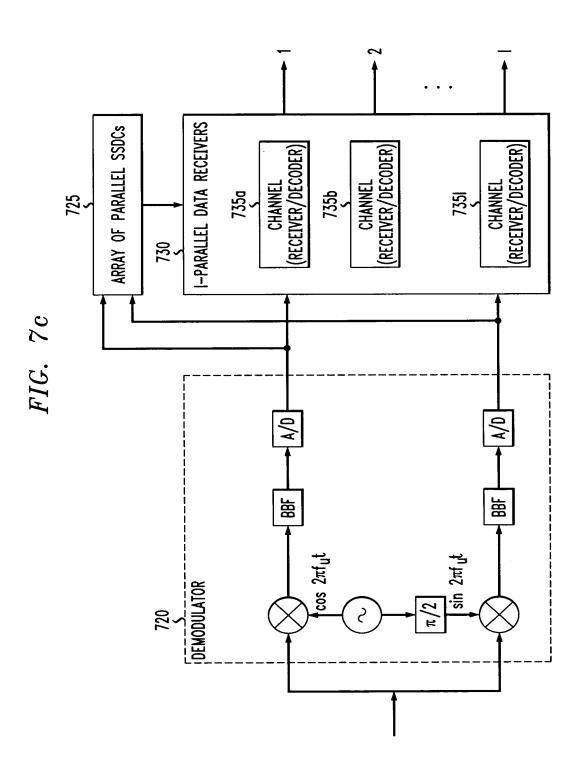
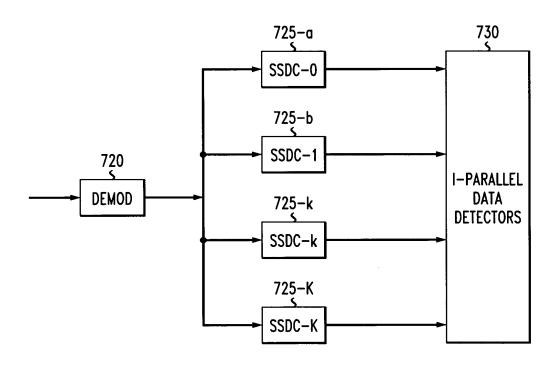


FIG. 7d



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FIG. 7e

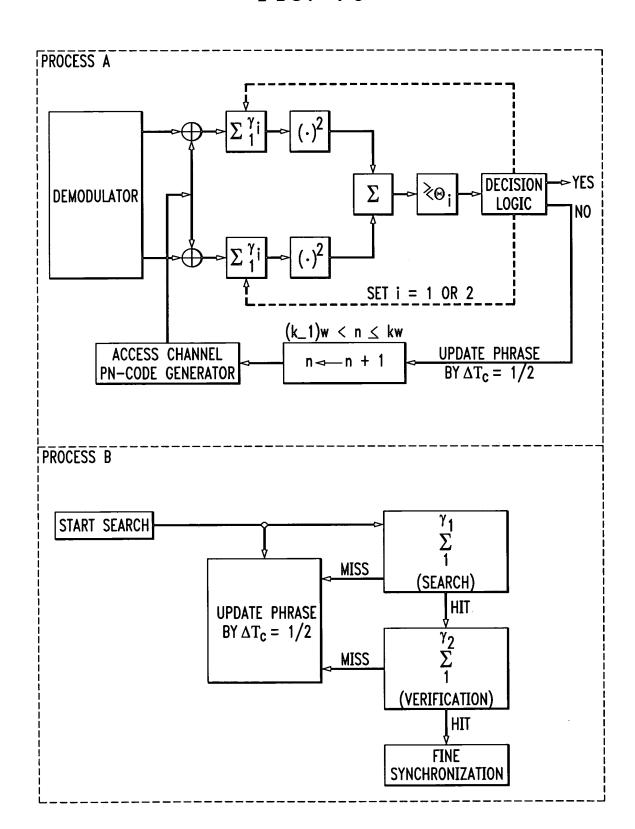


FIG. 7f

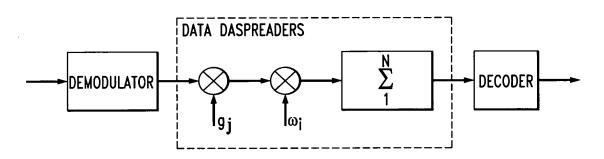
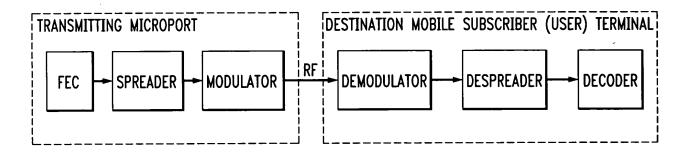


FIG. 8a



CHANNEL-1 W_i CHANNEL-j W_j CHANNEL-N

FIG. 8c

